

Amendments to the Specification

Please amend the paragraph at p. 1, ll. 6 – 10 as follows:

This application is being filed concurrently with related U.S. Patent Applications: U.S. Pat. Appl. No. 09/745,760, entitled "BINARY SWITCH FOR AN OPTICAL WAVELENGTH ROUTER," by Robert Anderson, now U.S. Pat. No. 6,542,657 ~~Attorney Docket Number 19930-000600~~; and U.S. Pat. No. 09/745,459, entitled "1×2 OPTICAL WAVELENGTH ROUTER," by Robert Anderson, now U.S. Pat. No. 6,535,664 ~~Attorney Docket Number 19930-000700~~, both of which are herein incorporated by reference in their entirety for all purposes.

Please amend the paragraph at p. 7, l. 26 – p. 8, l. 8 as follows:

In other embodiments, the input and output ports are staggered within other optical switch configurations. For example, a 1×2 optical switch configuration that may be used in a wavelength router is described in the concurrently filed and commonly assigned U.S. Pat. No. 6,535,664 ~~application~~ **entitled "1×2 OPTICAL WAVELENGTH ROUTER"** ~~(Attorney Docket No. 19930-000800US)~~ having Robert Anderson as inventor, which has herein been incorporated by reference for all purposes. A wavelength router may include an array of such 1×2 optical switches, each of which is associated with an input port and two output ports. In one embodiment, the output ports lie in different planes, such as shown in Fig. 4(a), while in another particular embodiment the output ports are coplanar, as shown in Figs. 4(b). In each of these figures, the optical switch operates by rotating MEMS micromirror 322 to one of two positions. In the solid position, an optical signal follows path 332 from input port 302 to output port 306, reflecting off MEMS micromirror 322 and fixed mirror 326. In the dashed position, the optical signal instead follows path 342 from input port 302 to output port 308, reflecting off MEMS

micromirror 322 and fixed mirror 328. In Fig. 4(b), the primes are added to the port reference numerals to distinguish their relative positions from the general configuration of Fig. 4(a).

Please amend the paragraph at pe 8, ll. 10 – 20 as follows:

The required stagger for ports can be expressed analytically. The path-length difference between paths 332 and 342 when all input and output ports lie in a common plane is given by

$$\Delta l = \frac{y_{328}(1 - \cos 2\beta)}{\sin 2\beta} - \frac{y_{326}(1 - \cos 2\alpha)}{\sin 2\alpha}.$$

To equalize the path lengths in the staggered-fiber embodiment, either fiber 306 or fiber 308 is offset by Δl . For example, with $y_{328} = 2y_{326} = 500 \mu\text{m}$, $\alpha = 50^\circ$, and $\beta = 40^\circ$, the path length is equalized with a stagger of $\Delta l = 122 \mu\text{m}$. In a particular embodiment shown in Fig. 4(b), and described in greater detail in the concurrently filed and commonly assigned U.S. Pat. No. 6,535,664 application entitled "1×2 OPTICAL WAVELENGTH ROUTER" (Attorney Docket No. 19930-000700), which has been incorporated by reference for all purposes, the path length may be equalized by changing the separation between the output fibers without introducing a stagger.

Please amend the paragraph at p. 8, ll. 22 – 30 as follows:

Still other embodiments use a modified 2×2 switch arrangement, referred to as a "2×2" switch," and described in the concurrently filed and commonly assigned U.S. Pat. No. 6,542,657 application entitled "BINARY SWITCH FOR AN OPTICAL WAVELENGTH ROUTER" (~~Attorney Docket No. 19930-000800~~), which has been incorporated by reference for all purposes. In such embodiments, construction of the switching arrangements with coplanar input and output ports results in a length mismatch for different optical paths, leading to potential difficulties reintegrating the optical signals into the optical fibers. In accordance with the

Appl. No. 09/747,064

Amdt. dated December 30, 2003

Reply to Office Action of October 3, 2004 (paper no. 7)

PATENT

invention, the input and output ports are staggered so that they are nonplanar, approximately equalizing the path lengths to improve reintegration of the signals as described herein.